

**John P. Quarles**  
**Associate Professor**  
**The University of Texas at San Antonio**

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Department of Computer Science  
College of Sciences  
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### **Education**

Doctor of Philosophy, Computer Engineering, University of Florida

Master of Science, Computer Engineering, University of Florida

Bachelor of Science, Computer Science, The University of Texas at Austin

### **Academic Positions**

2009	Assistant Professor, University of Texas at San Antonio
2015	Associate Professor, University of Texas at San Antonio

### **Research Interests**

Virtual Reality, Augmented Reality, Mixed Reality, Simulation, Computer Graphics,  
Human-Computer Interaction

### **SCHOLARSHIP/RESEARCH/CREATIVE WORKS**

#### Intellectual Contributions

#### **Journal Article, Academic Journal - Peer-Reviewed/Refereed**

##### **2016**

8. Lampotang, S., Lizdas, D., Derendorf, H., Gravenstein, N., Lok, B., & Quarles, J. P. (2016). Race-Specific Pharmacodynamic Model of Propofol-Induced Loss of Consciousness. *The Journal of Clinical Pharmacology*, 56(9).  
[onlinelibrary.wiley.com/doi/10.1002/jcph.716/full](http://onlinelibrary.wiley.com/doi/10.1002/jcph.716/full)
7. Samaraweera, G., Guo, R., & Quarles, J. P. (2016). Head Tracking Latency in Virtual Environments Revisited: Do users with Multiple Sclerosis notice latency

less?, *IEEE Transactions on Visualization and Computer Graphics*, 22(5).  
<http://ieeexplore.ieee.org/xpl/articleDetails.jsp?arnumber=7121008>

#### 2015

6. Guo, R., Samaraweera, G., & Quarles, J. P. (2015). Mobility Impaired Users Respond Differently than Healthy Users in Virtual Environments. *Journal of Computer Animation and Virtual Worlds*, 26(5), 509-526.
5. Biglari, E., Feng, M., Quarles, J. P., Sako, E., Calhoonm, J., Rodriguez, R., & Feng, Y. (2015). Haptics-Enabled Surgical Training System with Guidance Using Deep Learning. *Lecture Notes in Computer Science*, 9177, 267-278.
4. Freiherr von Lukas, U., Quarles, J. P., Kaklis, P., & Dolereit, T. (2015). Underwater Mixed Environments. *Lecture Notes in Computer Science*, 8844, 56-76.

#### 2013

3. Quarles, J. P., Lampotang, S., Fischler, I., Fishwick, P., & Lok, B. (2013). Experiences in Mixed Reality-Based Collocated After Action Review. *Springer*, 17(3), 239-252.

#### 2010

2. Quarles, J. P., Lampotang, S., Fischler, I., Fishwick, P., & Lok, B. (2010). A Mixed Reality Approach for Interactively Blending Dynamic Models with Corresponding Physical Phenomena. *ACM Transactions on Modeling and Computer Simulation*, 20(4), 22.

#### 2009

1. Quarles, J. P., Lampotang, S., Fischler, I., Fishwick, P., & Lok, B. (2009). Scaffolded Learning with Mixed Reality. *Computers and Graphics*, 33(1), 34-46.

### Conference Proceeding - Peer-Reviewed/Refereed

#### 2016

26. Arafat, I., Shahnewaz, S., & Quarles, J. P. (2016). The effects of cybersickness on persons with multiple sclerosis. *Proceedings for VRST 2016*. ACM.
25. Du, J., Shi, Y., Mei, C., Quarles, J. P., & Yan, W. (2016). Communication by Interaction: A Multiplayer VR Environment for Building Walkthroughs. *Construction Research Congress 2016*. ASCE.
24. Shahnewaz, S., Arafat, I., & Quarles, J. P. (2016). Visual feedback to improve the accessibility of head-mounted displays for persons with balance impairments. *Proceedings of 3DUI 2016*. IEEE.

#### 2015

23. Mei, C., Mason, L. L., & Quarles, J. P. (2015). How 3D Virtual Humans Built by Adolescents with ASD Affect Their 3D Interactions. *Proceedings of the 17th International ACM SIGACCESS Conference on Computers & Accessibility*.
22. Chatta, A., Hurst, T., Samaraweera, G., Guo, R., & Quarles, J. P. (2015). Get off

the Couch: An Approach to Utilize Sedentary Commercial Games as Exergames. Proceedings of the 2015 Annual Symposium on Computer-Human Interaction in Play. ACM.

21. Samaraweera, G., Perdomo, A., & Quarles, J. P. (2015). Applying latency to half of a self-avatar's body to change real walking patterns. *IEEE Virtual Reality (VR)*.

#### 2014

20. Quarles, J. P. (2014). The Effects of Avatars on Presence in Virtual Environments for Persons with Mobility Impairments. Brehmen: Conference and Exhibition of the European Association of Virtual and Augmented Reality (ICAT-EGVE), Eurographics.
19. Mei, C., Mason, L. L., & Quarles, J. P. (2014). Usability Issues with 3D User Interfaces for Adolescents with High Functioning Autism. Rochester, NY: ACM ASSETS.
18. Cantu, M., Espinoza, E., Guo, R., & Quarles, J. P. (2014). Game Cane: An Assistive 3DUI for Rehabilitation Games. Minneapolis, Minnesota: IEEE Symposium on 3D User Interfaces 2014.
17. Jendrusch, J., Lamptang, S., Lizdas, D., Gravenstein, N., Ham, D., Lok, B., & Quarles, J. P. (2014). Virtual Humans for Inter-Ethnic Variability Training in Sedation and Analgesia. Manhattan Beach, CA: Nextmed / Medicine Meets Virtual Reality 21.

#### 2013

16. Rashed-Ali, H. M., Quarles, J. P., Fies, C. H., & Sanciu, L. Use of augmented-reality in teaching energy efficiency: prototype development and testing. Honolulu: ARCC/EAAE 2014 International Conference: New Intersections and Connections. <http://www.arch.hawaii.edu/arcc-eaae2014/> (Accepted)
15. Ferrer, V., Yang, Y., Perdomo, A., & Quarles, J. P. (2013). Background Motion, Clutter, and the Impact on Virtual Object Motion Perception in Augmented Reality. In B. Mohler, B. Raffin, H. Saito, and O. Staadt (Eds.), *Joint Virtual Reality Conference of EGVE - EuroVR (2013)*. Paris, France: Eurographics, ACM.
14. Guo, R., Samaraweera, G., & Quarles, J. P. (2013). The Effects of VEs on Mobility Impaired Users: Presence, Gait, and Physiological Respons. *Proceedings of the 19th ACM Symposium on Virtual Reality Software and Technology (VRST 2013), 6-9 October 2013, Nanyang Technological University (NTU), Singapore..* Singapore: ACM.
13. Ferrer, V., Yang, Y., Perdomo, A., & Quarles, J. P. (2013). Consider Your Clutter: Perception of Virtual Object Motion in AR. *Proceedings of the IEEE International Symposium on Mixed and Augmented Reality 2013, Works-in-progress*. Adelaide, Australia: IEEE.
12. Ferrer, V., Perdomo, A., Rashed-Ali, H. M., Fies, C. H., & Quarles, J. P. (2013). How Does Usability Impact Motivation in Augmented Reality Serious Games for Education? Bournemouth University: Fifth International Conference on Games

- and Virtual Worlds for Serious Applications 2013 (VS-Games 2013).
11. Guo, R., & Quarles, J. P. (2013). Converting Sedentary Games to Exergames: A Case Study with a Car Racing Game. In IEEE (Eds.), *Proceedings of the fifth International Conference on Games and Virtual Worlds for Serious Applications 2013 (VS-Games 2013)*. Bournemouth University, UK: IEEE.
  10. Fies, C. H., Quarles, J. P., Rashed-Ali, H. M., & Dancer, D. (2013). Teacher Dispositions toward Augmented Reality (AR). (pp. 3148-3153). Chesapeake, VA: SITE Proceedings. [www.editlib.org/p/48578](http://www.editlib.org/p/48578)
  9. Quarles, J. P., Espinoza, E., & Cantu, M. (2013). A Cane-Based 3D Interface for At-Home Rehabilitation Games. *Proceedings of the Virtual and Augmented Assistive Technology Workshop at IEEE VR 2013*. Orlando, FL: IEEE.
  8. Samaraweera, G., Guo, R., & Quarles, J. P. (2013). Latency and Avatars in Virtual Environments and the Effects on Gait for Persons with Mobility Impairments. *IEEE Symposium on 3D User Interfaces*. Orlando, FL: IEEE.

### 2012

7. Guo, R., & Quarles, J. P. (2012). Differences in Presence between Healthy Users and Users with Multiple Sclerosis. *Proceedings of Perceptual Illusions in Virtual Environments Workshop at IEEE VR 2012*. IEEE.

### 2008

6. Quarles, J. P., Lampotang, S., Fischler, I., Fishwick, P., & Lok, B. (2008). Collocated AAR: Augmenting After Action Review with Mixed Reality. (pp. 107-116). Cambridge, U.K: Proceedings of the 7th IEEE and ACM International Symposium on Mixed and Augmented Reality.
5. Quarles, J. P., Lampotang, S., Fischler, I., Fishwick, P., & Lok, B. (2008). Mixed Reality Merges Abstract and Concrete Knowledge. (pp. 27-34). Reno, NV: Proceedings of IEEE Virtual Reality.
4. Quarles, J. P., Lampotang, S., Fischler, I., Fishwick, P., & Lok, B. (2008). Tangible User Interfaces Compensate for Low Spatial Cognition. (pp. 11-18). Reno, NV: Proceedings of IEEE 3D User Interfaces.

### 2006

3. Kotranza, A., Quarles, J. P., Wang, X., & Lok, B. (2006). Mixed Reality: Are Two Hands Better Than One. (pp. 31-34). Limassol, Cyprus: ACM Symposium on Virtual Reality Software and Technology (VRST).

### 2005

2. Quarles, J. P., Wang, X., Kotranza, A., Lok, B., & Allen, D. (2005). A Pipeline for Rapidly Incorporating Real Objects into a Mixed Environment. (pp. 170-173). Vienna, Austria: 4th IEEE and ACM International Symposium on Mixed and Augmented Reality.
1. Quarles, J. P., Wang, X., Kotranza, A., Lok, B., & Allen, D. (2005). Rapidly Incorporating Real Objects for Evaluation of Engineering Designs in a Mixed Reality Environment. Bonn, Germany: Proceedings of New Directions in 3D User Interfaces Workshop, IEEE Virtual Reality.

## Poster - Peer-Reviewed/Refereed

### 2015

3. Me, C., Mason, L. L., & Quarles, J. P. (2015). "I Built It!"—Exploring the effects of customizable virtual humans on adolescents with ASD. *IEEE Virtual Reality (VR)*.
2. Quarles, J. P. (2015). Shark punch: A virtual reality game for aquatic rehabilitation. *IEEE Virtual Reality (VR)*.

### 2014

1. Guo, R., Samaraweera, G., & Quarles, J. P. (2014). A unique way to increase presence of mobility impaired users—Increasing confidence in balance. *IEEE Virtual Reality (VR)*.

## Workshop paper - Peer-Reviewed/Refereed

### 2016

1. Mei, C., & Quarles, J. P. (2016). A software framework for developing mathematical model driven virtual human. *IEEE VR Workshop on Virtual Humans and Crowds for Immersive Environments*. IEEE.

## Intellectual Property

### Patent

#### 2016

3. Quarles, J. P. Devices and Methods for Interactive Augmented Reality.62/422,396.

#### 2014

2. Quarles, J. P. UNDERWATER VIRTUAL REALITY SYSTEM.62/021,077.

#### 2009

1. Quarles, J. P., Lampotang, S., Fishwick, P., & Lok, B. MIXED SIMULATOR AND USES THEREOF.

## Contracts, Fellowships, Grants, Sponsored Research and Residencies

### Grant - Funded

#### 2019

13. Quarles, J. P., "CAREER: Measuring and Reducing Cybersickness in Virtual Reality Physical Rehabilitation," Sponsored by NSF, Federal, \$537,898.00. (February 2014 - February 2019).

### **2018**

12. Quarles, J. P., "EAGER: Enabling Virtual Reality for Aquatic Rehabilitation of Persons with Disabilities," Sponsored by NSF, Federal, \$240,000.00. (September 13, 2016 - September 12, 2018).

### **2017**

11. Quarles, J. P. (Supporting), & P. R. (Principal), "Collaborative Research:Chameleon: A Large-Scale, Reconfigurable Experimental Environment for Cloud Research," Sponsored by National Science Foundation, Federal, \$10,000,000.00. (2014 - 2017).
10. Quarles, J. P. (Co-Principal), & Guo, R. (Principal), "Virtual Reality MS Walk," Sponsored by National Multiple Sclerosis Society, Other. (2014 - 2017).
9. Quarles, J. P., "PerSim – Medical Patient Simulator," Sponsored by UTHSA, Local, \$25,000.00. (January 1, 2017 - August 31, 2017).
8. Quarles, J. P., "UTSA Planning Grant: I/UCRC for Site Addition to the iPerform Center for Assistive Technologies to Enhance Human Performance," Sponsored by NSF, \$15,000.00. (July 26, 2016 - July 25, 2017).

### **2016**

7. Quarles, J. P. (Principal), "HCC:Small: Determining the Effects of Latency on Virtual Reality Physical Rehabilitation," Sponsored by NSF, \$472,840.00. (September 2012 - September 2016).
6. Quarles, J. P., "Use of computer virtualization to create a "mid-fidelity" patient simulator," Sponsored by UTSA, UTSA, \$20,000.00. (May 27, 2016 - August 31, 2016).
5. Quarles, J. P., "(PEP) CHS: Collaborative Research: Enabling and Evaluating Immersive Self-Avatars for Virtual Reality Physical Rehabilitation," Sponsored by UTSA, UTSA, \$20,000.00. (April 27, 2016 - August 31, 2016).

### **2015**

4. Quarles, J. P. (Co-Principal), & Feng, Y. (Principal), "Medical Data Analytics and Visualization Cluster," Sponsored by UTHSCSA SALSI, \$300,000.00. (2014 - 2015).

### **2013**

3. Quarles, J. P. (Principal), "EAGER: Presence and Navigation in Virtual Reality Rehabilitation Games for Mobility Impaired Persons," Sponsored by NSF, \$232,676.00. (September 2011 - August 2013).
2. Quarles, J. P. (Principal), "A Mixed Reality Conscious Sedation Simulator for Learning to Manage Variability," Sponsored by NIH, \$332,526.00. (April 2011 - March 2013).

### **2012**

1. Fies, C. H. (Principal), Quarles, J. P., & Rashed-Ali, H. M., "Augmented Reality," Sponsored by CPS-TSERI, \$155,000.00. (2010 - 2012).

## **Contract - Funded**

**2009**

1. Quarles, J. P. (Co-Principal), "Mixed Reality Simulation for Anesthesia Training," Sponsored by Drager Medical, \$35,000.00. (August 2008 - July 2009).

## **Fellowship - Funded**

**2009**

1. Quarles, J. P., Sponsored by Link Foundation, \$25,000.00. (September 2008 - May 2009).

## Presentations

## **Paper - Peer-Reviewed/Refereed**

**2013**

4. Fies, C. H., Quarles, J. P., Rashed-Ali, H. M., & Dancer, D., "Teacher Dispositions toward Augmented Reality (AR)," Society for Information Technology and Teacher Education (SITE), New Orleans. (March 28, 2013).

**2008**

3. Quarles, J. P., "Collocated AAR: Augmenting After Action Review with Mixed Reality," 7th IEEE and ACM International Symposium on Mixed and Augmented Reality, Cambridge, U.K. (September 16, 2008).
2. Quarles, J. P., "Mixed Reality Merges Abstract and Concrete Knowledge," IEEE Virtual Reality, Reno, NV. (March 10, 2008).
1. Quarles, J. P., "Tangible User Interfaces Compensate for Low Spatial Cognition," IEEE 3D User Interfaces, Reno, NV. (March 8, 2008).

## **Invited Talk - Not Peer-Reviewed/Refereed**

**2014**

2. Quarles, J. P., Magavi Holiday Party, Magavi. (December 12, 2014).

**2013**

1. Quarles, J. P., "VR for Disabled Persons: Current Research and Future Challenges," Dagstuhl Event 13241 Virtual Realities, Dagstuhl, Germany. (June 2013).

## **Oral Presentation - Not Peer-Reviewed/Refereed**

**2008**

2. Quarles, J. P., "The Augmented Anesthesia Machine: A Mixed Reality Application in Anesthesia," Simulation Faculty Learning Community,

- Gainesville, FL. (October 27, 2008).
1. Quarles, J. P., "Collocated After Action Review with the Augmented Anesthesia Machine," American Society Of Anesthesiologists Annual Meeting, Dräger Customer Appreciation Event, Orlando, FL. (October 21, 2008).

## **TEACHING**

### **Teaching Interests**

Computer Graphics, Human-Computer Interaction, Game Development

### **Courses Taught**

#### **Graduate**

- CS 5153 User Interfaces and Usability (Fall 2010 - Fall 2013)
- CS 5113 Computer Graphics (Spring 2011 - Spring 2014)

#### **Undergraduate**

- CS 4393 User Interfaces and Usability (Fall 2010 - Fall 2013)
- CS 2123/2121 Data Structures (Fall 2011 - Fall 2013)
- CS 4383 Computer Graphics (Spring 2011 - Spring 2014)
- CS 1063 Introduction to Programming (Spring 2010)

### **Directed Student Learning**

RA Supervision, (2016 - Present).  
Advised: Brita Munsinger

RA Supervision, (2016 - Present).  
Advised: Raphael Costa

Dissertation Committee Chair, (January 2015 - Present).  
Advised: Tanvir Irfan

Master's Non-Thesis Committee Chair, (September 2014 - Present).  
Advised: Bushra Zahed

Dissertation Committee Chair. In-Process, (2014 - Present).  
Advised: Imtiaz Arafat

Dissertation Committee Chair. In-Process, (2014 - Present).  
Advised: Sharif Shahnewaz Ferdous

Dissertation Committee Member. In-Process, (2014 - Present).



Advised: Don Davis

Master's Thesis Committee Chair. Proposal, (2013 - Present).

Advised: Alejandro Perdomo

Dissertation Committee Chair. Completed, (2012 - 2016).

Advised: Chao Mei

Honors Thesis. Completed, (2015).

Advised: Raphael Costa

Dissertation Committee Chair. Completed, (2011 - 2015).

Advised: Gayani Samaraweera

Master's Non-Thesis Committee Chair, "Proximity Based User Interfaces." Completed,  
(January 2015 - October 2015).

Advised: Vaishnavi Ravi

Master's Non-Thesis Committee Chair. Completed, (2011 - 2014).

Advised: Ernest Holloway

Dissertation Committee Chair. Completed, (2009 - 2014).

Advised: Rongkai Guo

## **SERVICE**

### **Department Service**

2015 - Present Committee Member, Communications Committee

2015 - Present Committee Member, Curriculum Committee

2015 - Present Committee Member, DFRAC

2015 - Present Committee Member, Faculty Awards Nomination Committee

2013 - Present Committee Member, Graduate Recruitment Committee

2014 - 2015 Committee Member, Graduate Studies Committee

2012 - 2015 Committee Member, Ph.D. Qualifying Exam Committee

2012 - 2015 Secretary

2009 - 2013 Communications Committee

## **College Service**

- 2015 - Present College Faculty Development Leave
- 2010 - Present Faculty Sponsor, The official UTSA Game Development Club
- 2011 Faculty Advisor, I have advised and/or supervised the following students in research:
- Undergraduate Students: Alex Perdomo, Daniel Curran
  - Masters Students: Vicente Ferrer, Jason Jendrusch, Werner Mendizabal, Ernest Holloway, Son Nguyen
  - Ph.D. Students: Rongkai Guo

## **University Service**

- 2015 - Present Committee Member, Institutional Review Board, UTSA

## **Professional Service**

- 2016 - Present Editor, Journal Editor, *Frontiers: Virtual and Augmented Reality for Education and Training*
- 2013 - Present Publicity Chair, IEEE Virtual Reality
- 2010 - Present Reviewer, Conference Paper, IEEE Virtual Reality
- 2016 - 2017 Conference Coordinator, Organizer, NSF I/UCRC iPerform San Antonio Site Planning Meeting
- 2016 Reviewer, Journal Article, *Springer Journal of Virtual Reality*
- 2015 - 2016 Tutorials Chair, International Conference on Health Informatics
- 2014 - 2016 Committee Member, IEEE Virtual Reality Program Committee
- 2016 Committee Member, Symposium on Spatial User Interfaces
- 2015 Reviewer, Journal Article, *MIT Presence Journal*
- 2015 Reviewer, Conference Paper, ACM SIGCHI

2014 - 2015	Committee Member, ICAT-EGVE Conference
2013 - 2015	Workshop Organizer, Workshop on Virtual and Augmented Assistive Technology
2009 - 2015	Reviewer, Conference Paper, IEEE/ACM International Symposium on Mixed and Augmented Reality
2015	Reviewer, Conference Paper, Spatial User Interfaces Symposium
2011 - 2015	Workshop Organizer, IEEE Virtual Reality
2015	reviewer, NSF
2014	Reviewer, Journal Article, Springer Journal of Virtual Reality
2013	Panelist, NSF
2012	Reviewer, Conference Paper, IEEE 3DUI
2012	Area Co-chair, IEEE International Conference on Pattern Recognition
2012	Committee Member, IEEE Virtual Reality
2012	Videos Chair, IEEE Virtual Reality
2009 - 2012	Tutorials Chair, IEEE/ACM International Symposium on Mixed and Augmented Reality
2012	Panelist, NSF
2010 - 2011	Exhibits Chair, IEEE Virtual Reality
2010	PREP/GEMS Guest Speaker, Northwest Vista College
2010	Panelist, NSF
2009	Reviewer, Conference Paper, ACM Joint Virtual Reality Conference
2009	Reviewer, Journal Article, International Journal of Human-Computer Studies

### **Public Service**

2011	Faculty Advisor, Flashscan 3D
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## **Awards, Honors, and Biographical Listings**

2014	President's Distinguished Achievement Award for Research Achievement, UTSA
2013	Certificate of Excellence, UTSA College of Science
2008	3rd Prize for Scientific Exhibits at the American Society of Anesthesiologists Conference
2008	CISE Travel Grant, University of Florida
2008	Student Government Travel Grant, University of Florida
2005	CISE Travel Grant from University of Florida
2004	Graduated with Special Honors from UT Austin

## **Professional Memberships**

2012 - Present	Association of Computing and Machinery
2008 - Present	Institute of Electrical and Electronics Engineers
2004 - Present	Phi Beta Kappa

## **Faculty Development Activities Attended**

2016 - 2017	Faculty Development Leave
2016	Workshop, SBIR/STTR Workshop, UTHSA
2012	Conference Attendance, Virtual Reality, IEEE, Costa Mesa, CA
2012	Workshop, Tenure & Time Management: How to Manage Your Time so You Can Publish Prolifically AND Have a Life Beyond the Ivory Tower, National Center for Faculty Development & Diversity, San Antonio, TX
2011	Conference Attendance, Virtual Reality, IEEE, Singapore
2011	UTSA
2010	Conference Attendance, Virtual Reality, IEEE, Waltham, MA

- 2009 Conference Attendance, International Symposium on Mixed and Augmented Reality
- 2009 Tutorial, Systems, Man, and Cybernetics Tutorial on Brain-Machine Interfaces, San Antonio, TX